

## HELICINA (HENDERSONIA) OCCULTA SAY, AGAIN

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Morrison's recent paper on *Hendersonia occulta*<sup>1</sup> invites discussion.

As is well known, the fossil form was described by Say as *Helicina occulta*. Later, Green described the modern form as *H. rubella*. The paper noted follows the tendency to regard the modern form as a variety of *occulta* under the name *rubella*.

The writer has previously shown that there is no warrant for the separation of the modern and fossil forms.<sup>2</sup>

Color cannot be a criterion, for the fossil shells are bleached, and the modern forms vary greatly, from light horn-colored, through lemon-colored and light red, to a deep brick red. Size is variable in both, and the extremes in one equal those in the other. The form of the shell is also variable in both, within about the same limits.

To separate the living form as a named variety gives an impression of differences which do not exist. If this rule is to be followed then *all* the fossils from the loess should be segregated under separate names,—a procedure which has already gone too far. Manifestly there is no excuse whatever for a varietal separation of the fossil and modern forms where both exhibit the same range of variation. The varietal name *rubella* should be dropped.

The statement is also made that “nearly all the records of the occurrence of this species as a modern form are from the Driftless Area of southwestern Wisconsin, northeastern Iowa and southeastern Minnesota and from the Appalachians”.

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<sup>1</sup> Morrison, J. P. E., *On the Occurrence of Hendersonia in Crawford County, Wis.*, NAUTILUS, XLIII, 41-45; 1929.

<sup>2</sup> For the writer's discussion of variation and distribution of the fossil and modern forms see: *Helicina occulta* Say, Proceedings of the Davenport Academy of Sciences, vol. IX, pp. 173-180; 1904. *Additional Notes on Helicina occulta*, Journal of Geology, vol. XIII, pp. 232-237; 1905. *Further Notes on Helicina occulta* Say, Proceedings of the Iowa Academy of Science, vol. XXVI, pp. 385-390; 1919.

In this northern territory the modern form has been found most abundantly in Johnson and Madison counties, Iowa, both far removed from the so-called Driftless Area (which, incidentally, was not wholly driftless in Iowa and some of the adjoining territory), and it occurs in Iowa in Linn, Hardin and Lee Counties, and in Mound County, Illinois,—all remote from the Wisconsin Driftless Area.

The southern limit of distribution of the modern form is in Marion County, Tennessee, which is almost exactly the southern limit of the fossil form. Here it is associated with a distinctively southern molluscan fauna.

It is significant, moreover, that as we approach the Driftless Area the fossils of this species become less and less common until they disappear before reaching this area which is assumed to be one of the centers of distribution of the modern form. It might appear, rather, that the colonies in the Driftless Area are later invaders, though the lesser deposition of loess in that region would probably make the preservation of the shells less certain.

The fossil shells are widely distributed in the Loess, occurring from Indiana to Nebraska, and south to near the south line of Tennessee on the east side of the Mississippi, though not known south of Missouri on the west side of the river. Southward it is displaced, in both the loess and modern faunas, by *Helicina orbiculata*.

The widely scattered modern colonies are evidently remnants of a once abundant race, but we must look to other than glacial causes for their reduction in numbers. Both the fossil and modern forms extend far south of the limits of glaciation, and the reduction in numbers and extent of local distribution has been distinctly greater in the southern part of the area.

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